OCTOBER 10.

The President, Dr. LEIDY, in the chair.

Twenty-three persons present.

A paper entitled "Snares of Orb-Weaving Spiders," by the Rev. Henry C. McCook, was presented for publication.

OCTOBER 17.

The President, Dr. LEIDY, in the chair.

Twenty-six persons present.

On the Mode of Entrance of the Sporidia of Parasitic Fungi.—Mr. THOMAS MEEHAN exhibited specimens of *Panicum sanguinale* L., the "Crab-grass" or "Fall-grass" of the Northern States, which were infested with a species of smut, according to Mr. Ellis allied to *Ustilago juncei*,[1] but which were of interest chiefly for the light they might throw on the still disputed question, whether the sporidia of the lower forms of fungi were introduced to the infested plant from the outside, or in some way through the circulatory system. There seemed to be some difficulties in the way of the belief that the introduction could be through the roots, and the spores find their way through the plant-structure to the surface—and yet there were some positive facts on record, which, unless controverted, showed, impossible as it might seem from a physiological and structural point of view, that there were good reasons for that belief. He referred to papers by Dr. E. Queckett, in the "Transactions of the Linnæan Society," especially the one published in vol. xix, p. 137, detailing experiments with potted plants of rye and other grains watered with water in which the sporidia of the ergot had been infused. The plants so watered in every case reproduced the ergot in the grain of the growing plants—and in no case did ergot appear in the plants which had ordinary water applied to them.

The case now exhibited tended to strengthen the observations of Queckett. Usually specimens of affected grass might be found where the herbage was growing in a mass, and a person could not tell whether the specimens were all from one plant or not. In this case the specimens of *Panicum* were all growing in a cultivated field, and in tufts distinct from one another. The plant from

[1] Since this communication was made, Mr. Ellis identified the fungus with *Ustilago Rabenhorstiana.*

which these specimens were gathered, was surrounded by others, the culms of these surrounding ones interlacing those of the plant exhibited, but only this one plant was infected. He did not count the number of culms, but felt safe in saying there were over fifty. In walking through this field among many hundreds of plants of this *Panicum*, he saw only one other plant, which in like manner was infested. This had one perfect panicle only among the numerous infested ones—the interlacing branches of surrounding plants of the same species being free, as in the other instance. It was scarcely credible that sporidia of the *Ustilago*, floating through the atmosphere, settled on fifty separate culms of one plant, and not one on the culms of adjacent plants which were growing in and among them. Again, the leaves of the *Panicum* have a large spathaceous sheath, two or three inches long. The *Ustilago* attacked the panicle while closely swathed in this sheath, and fully perfected its growth entirely therein. He had indeed to unfold the sheath in order to detect the mass of "smut" to which the embryonic panicle was reduced, in order to detect its presence. Only the peculiar appearance of the grassy tuft having no inflorescence as in the case of its neighbors, drew attention to the plant in the first instance. If it seemed incredible that fifty culms interlocked with as many from other plants, should each receive a germinating spore alone, it was still more incredible that the spores should have found their way from the outside to the interior of these tightly twisted sheaths.

These observations did not prove that the sporidia entered the plant by the roots, and made their way in some incomprehensible manner through the structure to the inflorescence; but they did render the external-entrance hypothesis doubtful, and, in connection with Queckett's experiments, are possibly of some worth.

Dr. LEIDY made some remarks on Mr. Meehan's communication, showing that the tendency of modern observations rather favored the view that the entrance of the sporidia of microscopic fungi was from the outside.

Sexual Characters in Cephalotaxus.—Mr. MEEHAN exhibited some fruit of *Cephalotaxus Fortunii*, a Chinese tree, this plant growing on the grounds of P. J. Berckmans, at Augusta, Georgia. This tree had for many years produced male flowers only. During 1882, it produced abundance of fruit. It showed that the genus was not truly diœcious, and further it afforded an illustration now not uncommon, that trees a long time of one sex only, would sometimes change to another. Sex is not an invariable characteristic in an individual tree.

A New Infusorian belonging to the Genus Pyxicola.—Prof. LEIDY exhibited drawings of an infusorian, a species of *Pyxicola*, which appeared to be different from those previously described.